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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/359,120	07/23/99	VOLZ	A 0105-34

DAVID S SAFRAN
SIXBEY FRIEDMAN LEEDOM & FERGUSON
8180 GREENSBORO DRIVE
SUITE 800
MCLEAN VA 22102

IM62/0301

EXAMINER

ALEJANDRO, R

ART UNIT	PAPER NUMBER
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1745

DATE MAILED:

03/01/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/359,120

Applicant(s)
Volz et al.

Examiner
Raymond Alejandro

Group Art Unit
1745



☒ Responsive to communication(s) filed on 7/23/99

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-28 is/are pending in the applicat

Of the above, claim(s) _____ is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-28 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 3

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the terminology "bio-compatible" in claim 28 is not defined or supported by the specification.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "an impermissible operating state" in claims 1-7 is of uncertain meaning and renders the claims indefinite and vague. Further, the term "an impermissible operating state" is not

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defined by the claim, and the specification does not provide a standard for ascertaining the requisite degree.

Claims 2-7, 11 recites the limitation "said deflection" in line 3. There is insufficient antecedent basis for this limitation in the claim.

The term "which make electrical contact with areas of the protective housing" in claim 22 is of uncertain meaning and renders the claims indefinite and vague. Further, the term "which make electrical contact with areas of the protective housing" is not defined by the claim, and the specification does not provide a standard for ascertaining the requisite degree.

The term "bio compatible material" in claim 28 is of uncertain meaning and renders the claims indefinite and vague. Further, the term "bio compatible material" is not defined by the claim, and the specification does not provide a standard for ascertaining the requisite degree.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over European Patent 470726 in view of Nagai et al 5783322.

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The instant claims are directed to a protective device for a rechargeable electrochemical battery wherein the alleged inventive concept comprises the switching element. Other limitations include the particulars switching elements, the fuses, the extensometer, the strain gauge, the detector elements, the membranes, the terminal contacts, the pole, the ceramic substrate, the compatible material.

European Patent discloses an electrochemical cell having a cell circuit cut-off switch comprising a deformable membrane sealing off the pressure generating components of the cell, with the membrane acting on a switch member to break the circuit in the cell, thereby circumventing the problems associated with pressure build up within the cell (abstract). The electrochemical cell employs a safety disconnect device isolated from the active materials of the cell when the pressure within the cell exceeds a predetermined level (col 1, lines 1-5). They are generally designed to vent when the internal pressure exceeds a predetermined amount (col 1, lines 7-10). It is also taught a shaped flip switch (col 1, lines 24-26). In some cells circuit interrupter devices, the device is located within the cell in proximity to, or contacting, the cell's active material (col 3, lines 24-26). It is taught that is possible to provide a cell circuit cut off switch by using a deformable membrane to seal off pressure generating components of the cell, with the membrane acting on a switch member to break the circuit in the cell (col 3, lines 49-58).

European Patent teaches the electrochemical cell having circuit interrupting means which, on build up of internal pressure beyond a given level, interrupts the cell's internal circuit,

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characterized in that the cell comprises a diaphragm serving to sealingly separate at least a portion of the active components from one terminal of the cell, a conductive member being centrally located on the diaphragm and in electrical contact both with the terminal and with the electrode therefor, and wherein the diaphragm bulges on build up of internal pressure such that, at a predetermined level, the conductive member is sufficiently displaced to break electrical contact with the terminal (col 15, lines 24-37). The diaphragm is at the open end of the cell, between the active components and the cover and comprises a conductive sheet, or a nonconductive sheet. There are provided in the diaphragm weakened, or hinging, points (col 15, lines 42-45, lines 51-53); a biasing mechanism located between the cover and the diaphragm, acting to push the conductive member against the diaphragm is also provided. A second conductive member biased into contact with the first conductive member and with the terminal, or with a surface electrically connected to the terminal, a non conductive fulcrum being positioned such that, when the conductive member urges the biased member towards the terminal or surface, the biased member is forced to pivot about the fulcrum, thereby breaking electrical contact between the conductive member and the terminal (col 16, lines 10-35). Disclosed is the spring structure; the fulcrum; and the retaining made by the biased member (col 16, lines 37-55).

European Patent discloses an electrochemical cell according to the aforementioned aspects. However, European Patent does not explicitly disclose the protective housing.

Nagai et al disclose a secondary battery pack including terminals connected to an external device, a rechargeable battery for storing and utilizing electric charges, a switching circuit for

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switching a state of the rechargeable battery between a charge state and a discharge state, a charge/discharge state detecting circuit for detecting a mode signal, a control circuit for controlling an operation of the switching circuit, a first power source switching circuit and a second power source switching circuit which switches a supply of a power source to the control circuit and is controlled in response to a mode detected by the charge (col 3, lines 1-35). **A secondary battery which is a rechargeable battery is sometimes used and housed in a case called a battery package** (col 1, lines 12-16). Since the battery package contains a secondary battery it may also be acting as a protective device for the battery

In view of the above, it would have been obvious to one skilled in the art at the time the invention was made to make the battery of the European Patent using the battery package as protective device in view of the teachings of Nagai et al as this package protects the battery from suffering operational related damages and also make it possible to use the secondary battery even when an unsatisfactory state occurs.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references disclose the related subject matter: Brainard 5371456, St.Jean et al 5976720, Kang 5962157 and Murray 5369802.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond Alejandro whose telephone number is (703) 306-3326. The

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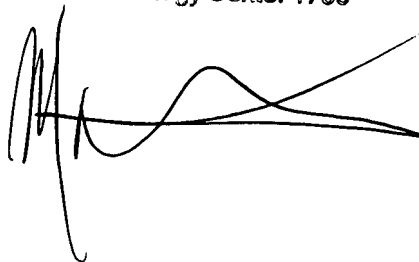
examiner can normally be reached on Monday- Friday from 8:00 am to 5:30 pm, with the second Friday of each biweek off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Maria Nuzzolillo, can be reached at (703) 305-3776 on Monday-Friday, with the first Friday of each bi-week off.

In order to transmit an unofficial fax, the number is (703) 306-3429. In order to transmit an official fax/amendments after final, the number is (703) 305-3599.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.

Maria Nuzzolillo
Supervising Patent Examiner
Technology Center 1700

A handwritten signature in black ink, appearing to be 'M. Nuzzolillo', written over the printed name and title.